

AMENDMENTS TO THE TITLE

Please replace the Title of the present application
5 by "Back Light Unit Including a Diffuser with Various
Diffusion Effects".

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraphs [0019] and [0023] in the specification of the present application by
5 following:

[0019] The present invention focuses on a diffuser structure of a back light unit. The remaining structure of the back light unit of the present invention is
10 similar to the conventional back light unit 10, and will not be explained again fully. Please refer to Fig.3 of a cross-sectional diagram of a back light unit 110 according to the present invention. The back light unit 110 is disposed under a display panel 118 for
15 providing light source to the display panel 118. The back light unit 110 comprises a light source generator 112 for generating light beams and a diffuser 116 disposed on the light source generator 112. The diffuser 116 is composed of liquid crystal molecules
20 and polymers. Since the refraction of the liquid crystal molecules and polymers is anisotropic, when the light beams generated ~~form~~from the light source generator 112 pass through the diffuser 116, the light beams will be refracted by the diffuser 116 so that
25 light beams with a better uniformity can be provided to the display panel 118. Moreover, in order to increase the output brightness of the back light unit 110, an additional reflective layer 114 is often disposed under the light generator 112. The reflective
30 layer ~~112~~114, which may be composed of a metal layer, is used to reflect the light beams generated from the light source generator 112 upward so as to increase

the output brightness.

[0023] However, the luminous intensity of the light tubes 113 may be varied due to aging of materials. In addition, sometimes the brightness of the light tubes 113 is also adjusted for display performance according to the change of the screen or environment. Therefore, once the relationship between the diffusing effect of the diffuser 116 and the luminous intensity of the light tubes 113 changes from the original optimized design, the display performance may be deteriorated. Thus, in the preferred ~~embedment~~ embodiment of the present invention, the diffuser 116 is an electrically variable diffuser composed of polymer dispersed liquid crystals (PLDGPDLC). As shown in Fig.6, at least one pair of electrode plates 120 is used, with one electrode plate 120 being disposed on each side of the diffuser 116. The electrode plates 120 are electrically connected to a power supply so as to provide an external electric field to the diffuser 116. The polymer dispersed liquid crystal is a kind of nematic liquid crystal and the refraction index of the liquid crystal molecules is variable according to the electric field applied thereon. The pattern of the electrode plates 120 can be designed properly to fit the requirement of the back light unit 110, for example the pattern of the electrode plates 120 may correspond to the shapes of the tubes 113. Thus, when the brightness of the light tubes 113 varies due to aging materials or some other reasons, the external electric field can be adjusted so as to modify the diffusing effect of the diffuser 116. Therefore, a new optimized

relationship between the diffusing effect of the diffuser 116 and the brightness of the light tubes 113 can be made.

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